

GOODWILLIE (D.H.)

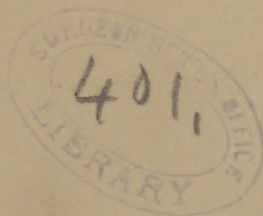
NASAL INTUBATION.

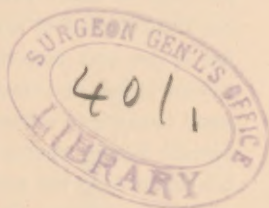
BY

D. H. GOODWILLIE, M.D.

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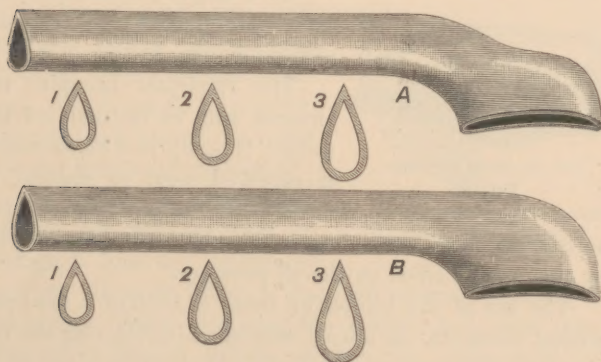




NASAL INTUBATION.*

BY D. H. GOODWILLIE, M. D.

NASAL intubation consists in placing in the nostril a tube of suitable material, size, and shape, through which



W. F. FORD, N. Y.

FIG. 1.—Improved nasal intubation tubes. Full size.

the respiration is performed, and also as a means of treatment for nasal diseases from various causes. After an ex-

* Read before the Medical Society of the State of New York at its eighty-fourth annual meeting.

perience of many years with metals and other material, it has been proved to my own satisfaction that pure soft rubber is the best material for the intranasal tubes. As the rubber is soft and elastic, it gently brings the diseased intranasal tissue into normal condition. Respiration can be performed during treatment. The tube gives little or no inconvenience to the patient and is not seen externally. It is readily introduced and removed.

The cut represents the tubes made of pure soft rubber. The three sizes and two forms A and B (Fig. 1), making a set of six, have proved sufficient for all ordinary cases. The difference in the two forms is only at the anterior end of the tubes, so as to meet the requirements in the treatment of individual cases.

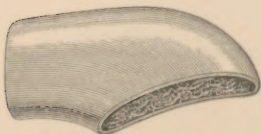


FIG. 2.—Nasal respirator.
Full size.

By a slight modification, the tube is also made use of as a nasal respirator (Fig. 2).

The respirator occupies the anterior part or vestibule of the nostril (Fig. 3), and holds within it prepared wool or sponge, to cleanse the inspired air of impurities, or by suitable drugs medicate the inspired air for its therapeutic effect on the air passages.

The use of the intubation tubes is both of a *local* and *general* character—as a local treatment in restoring the respiration by correcting abnormal nasal conditions, and so, in a general way, increasing pulmonary action, as there can not be normal pulmonary respiration without normal nasal respiration. Respiration and alimentation are very essential processes in the human economy, and must be in normal proportions to support the vital powers.

As mastication is necessary to a proper digestion, so is nasal respiration to a normal pulmonary respiration. Ali-

mentation, respiration, oxygenation, and assimilation are prime factors in the physiological process of human vitality.

In order to get a successful result in treatment, give personal attention daily to all cases, and twice daily for all surgical cases, during the first part of the treatment.

After the first few days' treatment the patient can, between visits, remove the tube for cleansing, and return it as often as necessity requires. For cleansing the nostrils during treatment the best thing is peroxide of hydrogen, full strength, applied in the form of spray, with a rubber atomizer, or with cotton on a probe (Fig. 4), and passed into the inferior meatus of the nostril.

Any good antiseptic will answer, but the peroxide of hydrogen has the advantage over all others of being a thorough cleanser and a good antiseptic. After cleansing the nostrils and tube, put a little boro-vaseline (white vaseline, $\frac{3}{4}$ j; boric acid, $\frac{3}{4}$ j;

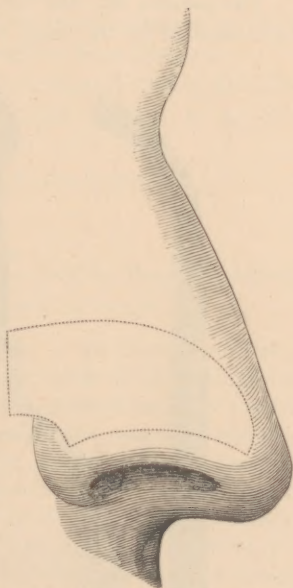


FIG. 3.—Nasal respirator in position in the nostril out of sight.

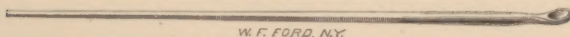
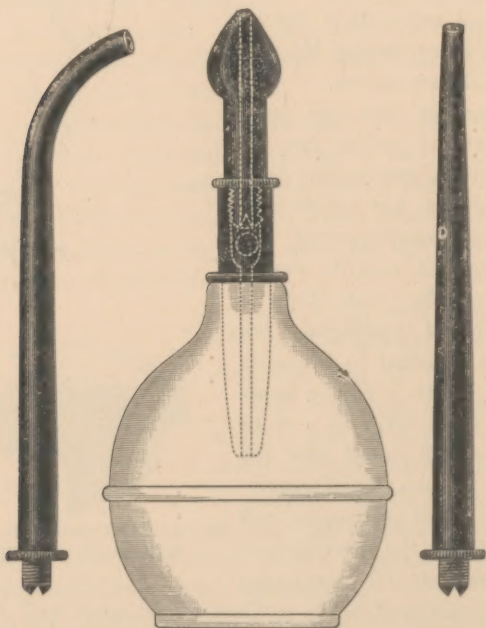


FIG. 4.—Nose and ear probe and curette. Half size.

menthol, 1 per cent.) on the tube, or warm and spray the nostrils with it before placing the tube in the nostril.

If there is much irritation, substitute a one-per-cent. cocaine solution in the place of the menthol.

The patient can use between visits, after cleansing, the boro-vaseline in tin tubes for convenience, or a powder of



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FIG. 5.—Insufflator for the application of medical and surgical powders.

boric acid and menthol by means of my powder insufflator (Fig. 5).*

To place the tube in the nostril, raise the end of the nose and pass the tube into the lower passage until the

* Instruments, boro-vaseline, and powders obtained of the W. F. Ford Surg. Inst. Co., 315 Fifth Avenue, N. Y.

anterior end is in the vestibule out of sight. The rubber tube increases in size by use and may require to be shortened by cutting off the posterior end.

The following are some of the nasal diseases in which the intranasal tubes have successfully been used, viz.:

1. Hypertrophies of the soft intranasal tissues, when the tube is used for a sufficient length of time to produce change in the vascular tissue.
2. Deviations of the cartilaginous septum.
3. Intranasal hæmorrhage.
4. Fractures of the nose.
5. After the removal of hypertrophic tissue, deviations of the septum, polypi, etc., by surgical means.

CASE I. *Intranasal Hypertrophy of the Turbinated Tissue.*

—Mrs. A. B. had hypertrophied soft tissue of both inferior turbinates, with all the attendant discomforts of improper respiration. Mucus dropping down through the post-nasal space, as it could not be blown out of the nostrils. Partial deafness, H. D. R. $\frac{3}{4}$, H. D. L. $\frac{3}{4}$. Cleansed the nostrils with a spray of peroxide of hydrogen, followed by the vapor of boro-vaseline and menthol for a few days, and then introduced tube No. 1 A into one nostril. On the third day after, introduced a similar tube in the other nostril. The respiration through them gave her immediate relief. After ten days, tube No. 1 A was changed for No. 2 A. She was seen daily for about six weeks for nasal applications and ear inflation. For one month of this time the tube was kept in constantly night and day, then for two weeks about half the time.

She used the spray for cleansing and the insufflation of the boric acid and menthol. Nasal respiration and hearing quite restored. The nasal secretion became normal. General health very much improved.

The nasal intubation tubes are exceedingly valuable in just such cases as the above, where there is hypertrophic turbinated tissue, or great dilatation of the vascular tissue, pro-

ducing abnormal nasal respiration. The gentle pressure of the intubation tube causes contraction of the dilated blood-vessels and sinuses and absorption of the hypertrophic tissue. No other treatment is necessary except thorough antiseptic cleansing. The patient usually experiences immediate relief from the respiration through the tube. If there is any irritation produced when the tube is first put in, a ten-per-cent. solution of cocaine, applied by cotton on a probe and passed into the inferior meatus or by spray, will allay it. This will be more often required in surgical cases.

In the following cases it may be seen how the nasal intubation tubes serve a very important part when *surgical measures* become necessary as a part of the treatment.

They give comfort in respiration, prevent hæmorrhage and excessive granulation, bring the parts into normal shape, and, when kept in for a sufficient time, prevent contraction and secure a normal passage.

CASE II. *Loss of Vocal Power from Nasal Stenosis.*—Rev. Dr. J. L. experienced great difficulty in public speaking by the partial loss of his vocal powers. The effort was followed by hoarseness and expectoration. On examination, there was found to be stenosis of the left nostril, occasioned by an exostosis of the anterior nasal spine and deviation of the cartilaginous septum into the left inferior meatus. Very little respiration through that nostril, and the nasal secretion passing into the naso-pharynx. Follicular pharyngitis, vocal cords and bands catarrhal; hearing distance, left ear, $\frac{2}{40}$, and thickening of the naso-Eustachian opening. Removed the obstructions in the nostril, inserted a tube No. 1 A, and in a few days replaced it by No. 2 A. On the third day after its first insertion he spoke in public with the tube in, and continued to perform his public speaking until the tube was removed six weeks after. He said the breathing through the tube was a great comfort from the very first and helped him in the treatment in speaking. His vocal powers have now returned, and voice quite under control.

His auditors express delight at the good change produced in his voice.

CASE III. *Aphonia from Abnormal Nasal Respiration*.—A. M. G., lawyer, of Canada, had become so aphonic that he had been unable to argue cases in the courts. There was a sharp and long deviation of the nasal septum into the left inferior meatus, which was of normal thickness. Very little respiration and no anterior drainage through that nostril; secretions passed out through the naso-pharyngeal space, and to a considerable extent into the stomach. Vocal cords thickened by chronic congestion, which extended into the larynx, and, as a consequence, abnormal vocalization. Had some indigestion with constipation, with very little desire for food. Treatment consisted in fracturing the septum by means of my nasal forceps and placing it in normal position. An intubation tube, No. 2 B, was placed in the left nostril, which kept the fractured septum in place. Thorough antiseptic dressing of the nostrils was kept up for six weeks, during which time he had the tube in, except when removed for cleansing. A No. 3 B tube was used after the first two weeks, when the swelling had subsided. He kept the tube in for a month longer, about half the time each day; when healing and contraction were complete it was removed. His voice, respiration, and digestion are now quite restored.

CASE IV. *Intranasal Deformity from an Injury*.—The Rev. F. R., of New York, received a blow upon the nose in youth from a base-ball, producing a fracture of the cartilaginous and bony septum, and dislocation with an exostosis into the inferior meatus of the left nostril. There was little or no respiration through the nostril, and his voice became seriously affected. On October 10, 1887, the exostosis was removed by my revolving shielded trephine, and the septum straightened by the nasal forceps. A nasal intubation tube No. 1 B was introduced into the left nostril, and kept in constantly day and night for a month, during which time he continued his public speaking.

This tube was replaced by No. 2 B, which was kept in about half the time for a month longer. It was removed several times a day for antiseptic cleansing. He has now by this treatment restored respiration and good voice, with no mark of the

operation left in the nostril. He is present to be examined by any who desire to see the successful result of treatment in his case.

CASE V. *Exostosis in the Left Nostril and Hypertrophic Turbinated Tissue in the Right; Non-oxidation and Assimilation.*—F. M., of Memphis, Tenn., eighteen years of age. General health impaired for some years, preventing him from pursuing his studies. Tall, slender, contracted chest from improper pulmonary action in consequence of non-nasal respiration and mouth-breathing, and lung expansion an inch and three quarters. Albumin in the urine in so great quantity that his former treatment had been directed with reference to it especially. Removed exostosis and displaced septum; at the same time scarified through the hypertrophic turbinated tissue of the other nostril by the electro-cautery knife. By scarifying, the smallest amount of mucous membrane (so essential in normal nasal respiration) is destroyed in reaching the underlying hypertrophic tissue and no scar is left. A very small scar was unavoidably left in the other nostril by the removal of the exostosis by the trephine. A No. 1 A intubation tube was put in both nostrils immediately after the operation and kept in day and night without an hour's loss of sleep or discomfort. A No. 2 A tube was substituted for the others after a few days in both nostrils. The tube was removed from the right nostril at the end of five weeks and from the left in ten weeks, as healing and contraction had taken place. As soon as respiration through the nose was restored, by means of the intubation tubes, together with the thorough antiseptic cleansing and pneumo-muscular chest exercise with proper alimentation, it restored his recuperative powers and gave him comfort of body and mind such as he had never experienced.

When discharged from treatment there was not a trace of albumin in the urine, a good normal nasal and pulmonary respiration, chest expansion increased to three inches, and he had gained ten pounds in weight.

From the use of the intubation tubes in such cases, it requires the minimum amount of hard tissue to be removed,

thus producing little or no scar. In the electro-cautery scarring there should be no scar left after the healing and contraction. The tube preserves the normal caliber of the intranasal passages.

CASE VI. *External Nasal Fracture, with Dislocation of the Septum from Behind the Columna Nasi.*—Captain G., of Montreal, Canada, when a boy, fell and broke his nose by a blow on the bridge, at the junction of the hard and soft tissue. His condition when he came under my treatment three years ago was as follows: The lower end of the nose was flattened, while upon the bony ridge about the middle was a point of hypertrophied bone that gave great prominence to the bridge. Septum dislocated from behind the columna nasi into the right nostril, and the top of the septum flattened by the blow and bent into the right nostril. No respiration through the right nostril, and very little through the left. Treatment consisted in amputating the end of the dislocated cartilaginous septum and placing it in normal position behind the columna nasi. The crushed septum was next cut through from one nostril to the other, separating the septum from the depressed ridge of the nose. The nasal forceps was applied and the septum straightened and brought into normal position. Intubation tube No. 3 B was placed in the nostrils and kept all the parts in normal position and shape. Respiration was carried on through the tube, this being removed twice daily for antiseptic dressing, and immediately replaced. The exostosis on the bridge of the nose was removed by a longitudinal incision on the top of the ridge, the skin and periosteum lifted, and the exposed hypertrophied bone removed by the revolving multiple knife. The wound was closed by fine sutures and antiseptic dressing. The result of this treatment was all that could be desired, the internal and external deformity being entirely removed. The wax models and photographs show the case before and after treatment.

CASE VII. *Serious Nasal Hæmorrhage.*—I was called by the family physician to see J. R., of New Jersey, a young man exsanguinated by a nasal hæmorrhage, whose life had been threatened on several occasions by these hæmorrhages. It was found

on examination that the inferior turbinated bodies were very much enlarged by dilatation of the sinuses and blood-vessels. An electro-cautery needle was passed into each turbinated body and an intubation tube No. 1 A placed in each nostril. Three days after, tube No. 2 A was used, which gave him good respiration. After a week's treatment he had learned to remove the tubes himself, cleanse and replace them. He was sent to the sea-shore to recuperate. In three weeks he returned in vigorous health, having gained twelve pounds since he came under treatment. The tubes were then removed. This young man was of a hæmorrhagic diathesis; he had very little nasal respiration, and had breathed by the mouth very impure air, resulting in this bodily condition of non-oxidation. His nasal and pulmonary respiration being normal, he was advised to lead an out-of-door life, and has since been in good health.

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